



ONLINE FLYING MANUAL

Version 1.5 – August 2005

This manual is intended for online flight simulation use only with real-time ATC networks such as VATSIM and IVAO. This manual was written in late 2002 and has been updated since. It describes the software and the procedures used at the time of writing. New and updated software is released frequently so please make sure you have the latest version of this manual. Over and above the terms of the GNU Free Documentation License, if you wish to use this document on your website or include parts of it in your own documents, written permission must be obtained from the President and/or CEO of EuroHarmony VA - <http://www.euroharmony.com>.

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1. About flying online

1.1 Why fly online?

Imagine a multiplayer session in Flight Simulator with hundreds of real human users, either air traffic controllers or pilots. Imagine yourself flying your preferred routes, but instead of the 'sterile' environment of Flight Simulator and its AI traffic, you are guided by real people acting as air traffic controllers and see other real people flying in skies above Europe.

With the appearance of Squawkbox and ProController software and the opening of the SATCO network that provide servers for flight simulation, this was not a dream anymore. You can now enhance your flight simulator experience with real-time ATC, real weather, realistic procedures and voice communication.

The current incarnations of the SATCO network (IVAO, VATSIM and so forth) provide a realistic environment for online flying, simulating the real procedures as professionally as is possible, making online flying very attractive. On the other hand, however, it's not as easy as single-pilot Flight Simulator (you can forget the basic Flight Simulator ATC) so this document provides you with some guidelines for online flying.

Don't be afraid if you are inexperienced. Your first online flights will not be perfect, but after a few flights you'll get used to the procedures and will thoroughly enjoy online flying. You may ask a controller or another experienced pilot on the network to help; most of them are very helpful.

Note: this manual deals only with the *software* and *procedures* used when flying online. It is assumed you already have experience in flying and navigation. If you don't, we recommend checking the tutorials of Flight Simulator. Also you should know the numbers and letters pronunciation, you should be able to interpret charts, diagrams and METAR reports and speak English quite well.

See you in the skies!

1.2 Networks

There are two major networks which offer this service to flight simulation enthusiasts: VATSIM and IVAO. They have approximately the same number of members online at a given time, so it's your decision where to register. Also you can register at both of them, and then fly every time on the network that has ATCs at your selected departure/destination airports.

For VATSIM go to <http://www.vatsim.net>, then click on the link Join Now in the menu on the left. To join, you must read and understand the Code of Regulations, Code of Conduct and User Agreement and agree to the Terms and Conditions. Note that you have to provide an ISP-based mail address (no free e-mail accounts like Yahoo)

For IVAO go to <http://www.ivao.org>, and click on Join IVAO in the menu on the left. To join, please read carefully the IVAO Rules and Regulations.

You will shortly receive your member ID and password (both are 6-digit numbers) and you can log on to the network as a pilot.

Registering is free for both IVAO and VATSIM and no exams are needed to fly.

2. Software needed

2.1 Who's online?

Before starting out, it's advisable to check which ATCs are online, so you can plan your flight accordingly. This section deals with ServInfo and Whazzup, the programs used to display the data about the networks.

Using these programs, you can find out:

- data about the countries, FIRs and airports with active air traffic controllers online
- position of ATCs and pilots flying online, on a real-time map
- information about ATCs, like name, rank, ATIS or whether they are using voice for communication
- information about pilots, like name, call sign, flight plan, altitude and speed, distance from departure and destination airports or estimated time to reach destination
- real-time weather and METAR reports
- information about network servers and RW servers

Note: these two programs are quite different and I recommend using both of them to get all the information of the networks. Both programs are freeware. There are also several software projects currently in development that will provide "ServInfo NG" functionality (only one of which is ServInfo 3!)

A. Using ServInfo

ServInfo can be downloaded from <http://www.avsim.com/hangar/utills/servinfo/downloads.htm>. Current version is 2.02, released in December 2003. Just unpack the archive in the directory and click on the servinfo.exe file.

A help file is included; however here are some general guidelines:

- Click on the VATSIM or IVAO button to load network data. You can then view the ATCs/planes in a specific country or FIR or at a specific airport.
- Click on the name of a controller/pilot to see more information about him/her
- The Network Servers tab displays the IP addresses of the available servers; you'll need this when you are connecting to the network
- Select Tools > Metars for the current weather.
- To search ICAO codes, select Tools > ICAO codes
- You can see a map with the flights, manned ATC positions, local weather etc
- You can even integrate ServInfo in the panel of your aircraft as a gauge (see documentation for details)

B. Using Whazzup

For a long time, Whazzup had the advantage of displaying all ATC positions, aircraft and flight plans on a map in a convenient way; but the newest version of ServInfo also contains a map so you might want to use only ServInfo. You can download Whazzup at <http://www.schiratti.com/whazzup.html>.

Some information about using the program:

- click on the NETWORK button to bring up the Server Details box; you can view information about the pilots, controllers and servers and you can select between VATSIM and IVAO
- click on the SCHEDULE button to view the status of all flights
- click on ICAO MET for searching ICAO codes and for getting weather reports
- zoom the map using F11 and F12, left click to select an area by drawing a box, right click to drag

2.2 Pilot Client

A. IVAO

On IVAO we use IvAp as a pilot client and TeamSpeak 2 for voice communication.

You can download IvAp at <http://www.iviao.org/softdev>. You have to download the pilot client installer (1.7MB), and the MTL base package (27MB) at a minimum. Please also download and read the manual to know how to connect and how to use IvAp.

Download TeamSpeak 2 from <http://www.goteamspeak.com>.

B. VATSIM

On VATSIM, Squawkbox 3 [SB3] is used as pilot client and Advanced Voice Client [AVC] is used for voice communications.

You can download SB3 at <http://squawkbox.ca/downloads>.

Download AVC from <http://www.vatsim.net/voice/avc>.

Please check the VFA section on the EuroHarmony site, there's a detailed list of the programs needed and instruction about connecting.

2.3 Other Useful Programs

FS Navigator – This is a third party flight planner. It has a lot more options, is more user friendly and far more powerful than the inbuilt flight planner in Flight Simulator. It is commercial software, and you have to buy a registration after the trial period ends. Current version is 4.51; you can download and buy it at <http://www.fsnavigator.com>.

FSChatScroll – Some people use the chat box in Flight Simulator 2002 to communicate (press Enter to bring it up) and not the IVAP/SB3 window (there is no difference in typing in the IVAP/SB3 window and in the chat box). However the chat box has the annoying habit of jumping always to the first message, so you have to manually scroll down every time to view the most recent messages. FSChatScroll by Chocolate Software will solve this problem, so you will always see the most recent message. Current version is 1.6; you can download it from <http://www.chocolatesoftware.com/fschatscroll/>.

FSScreen – This is a very useful tool for taking screenshots, written by Matthias Holzer. Just install it, run it and press 'Print Screen' any time you want to take a screen shot; the screen shot will be automatically saved to folder that the FSScreen executable was run from - you don't have to pause Flight Simulator or to switch to another program. Current version is 1.1; Download it from avsim.com (search for fsscreen.zip in the file library).

3. Flying an online flight

3.1 Flight preparation

As you already know, VATSIM and IVAO simulate realistic flight operations, so you are expected to be professional and know real-world procedures. Of course don't be afraid if you aren't familiar with these procedures, most experienced controllers and pilots will be glad to help you.

1. The first thing is to plan your flight. If you want to fly a flight for EuroHarmony, select one from the Timetable and create your flight plan accordingly using the Flight Simulator inbuilt flight planner or other software like FS Nav. Write down all data (departure and destination airports, route, planned flight level and speed etc) – you'll need them later. If you use the Squawkbox FMS, enter the route in the FMS.
2. If you are flying an online flight for EuroHarmony, your call sign will be EHM and the *last 3 digits* of the flight number. If you use voice, call sign will be EuroHarmony (Harmony is also accepted) *regardless of the EHM division you fly for!*

For example, if you fly flight EHM-5419, call sign will be EHM419 and voice call sign EuroHarmony four one niner. If you fly flight EHM-B130 – this is a Business division flight – call sign will be EHM130 and voice call sign EuroHarmony one three zero.

3. You are expected to have maps for the departure/destination airports, so you can comply with instructions like 'Taxi using S O W', 'you are cleared via TEDRA1C', 'make standard arrival NETUL2H' or 'hold at FLR as published'.

Maps are available from the sites of VATSIM or IVAO divisions. Not all European countries have an Active division, so you might not be able to get charts for those countries.

VATSIM: for Europe (except UK and Russia) go to <http://www.vatsim-eur.org> then select Countries – you'll likely get maps from their pages; or check <http://www.vatsim-uk.net> for charts of British airports.

IVAO: go to <http://www.ivao.org> and select Divisions then Active.

It is not compulsory to have maps/charts for your flight. In this case, simply tell the ATC you don't have maps/charts and he'll let you to taxi via own discretion if you don't have the airport diagram or he'll guide you with vectors if you aren't familiar with a SID (Standard Instrument Departure).

4. Check the navaid positions and frequencies near your departure/destination airport, so you won't get confused if the ATC says something like 'depart BSE bearing 250, then intercept FLR radial 215 to VALPA'. Write down the runway data at the departure, destination and alternate airports (e.g. ILS frequency and course).
5. Take a look at the weather reports at your departure and destination airport (e.g. using ServInfo)
6. Start the simulator and place your selected aircraft at the departure airport.
Important: ALWAYS place the aircraft at the gate or on the apron, not on a runway or taxiway (especially not the Active Runway as Flight Simulator does by default)! If you connect to the server when you are on an active runway, you are likely to cause a conflict: there may be planes which are landing/taking off.
7. If you use FS2000, you may run it in full screen. However, if you use FS2002, DO NOT use full screen as problems may occur; run it in a maximized window instead.
8. Select Aircraft > Realism Settings then Ignore Crash. Also disable the AI traffic (set the percentage to 0).
9. Start Squawkbox/IVAP, enter your flight plan (see Section 2.2) and connect to the network. Don't forget to resend your flight plan after you connect.

Once you are online, IVAP/SB3 will automatically download the actual real-world weather and load it into Flight Simulator. Remember to press B to set your altimeter to the local QNH setting.

3.2 Contacting the ATC

It is very important to know the ATC positions and functions, so you can contact the right controller at the right time. The call signs of the ATC, as you can see in ServInfo or Whazzup, are XXXX_YYY where XXXX is the airport or FIR name they control and YYY is their function (Ground Controller, Approach Controller etc). For example, EDDF_APP means Frankfurt Approach.

A letter may be inserted between the ICAO code and the function, like EDDF_V_APP (V means the controller uses voice – this letter is used only on VATSIM) or LTAA_E_CTR (E means here East).

A. Facilities

The ATC functions may be:

- DEL** *Clearance Delivery*. Very rarely used on VATSIM/IVAO. Issues the route clearance. (example: EHAM_DEL for Amsterdam Schiphol Clearance Delivery).
- GND** *Ground Controller*. Controls the aircraft taxiing on the ground at a given airport EXCEPT runways. (example: EGLL_GND for London Heathrow Ground).
- TWR** *Tower Controller*. Controls all runways and the airspace until about 8 nm from the airport. Issues take-off and landing clearances. Also handles VFR patterns. (example: LIRF_TWR for Rome Fiumicino Tower).
- APP** *Approach Controller*. Controls the airspace up to 50 nm from an airport, handles arriving and departing traffic. (example: LGAV_APP for Athens Venizelos Approach).
- DEP** *Departure Controller*. Very rarely used on VATSIM/IVAO, and only at very busy airports. Similar to APP but handles only departing traffic, making the work easier for APP. (example: EDDT_DEP for Berlin Tegel Departure).
- CTR** *Center (or Radar) Controller*. Controls all airspace in a FIR that is not controlled by approach controllers, handles the planes en route. (example: LHCC_CTR for Budapest Radar)
- FSS** *Flight Service Station*. Supervise a very large area (e.g. the whole Europe). The five EuroControl facilities and most oceanic facilities are also FSS. (example: EURM_FSS for Maastricht Radar)

B. Which ATC to contact?

GND, TWR, APP and CTR are the most common positions and we'll deal only with these (DEL or DEP is very rarely used on the networks, usually only during fly-ins).

Typically, you should contact the controllers in the following order:

- DEL should be contacted first if online. Ask for route clearance, then he/she will hand you over to GND
- GND issues startup and taxi clearance (and route clearance if there's no DEL). He/she will guide you until you reach the holding point of the active runway, then he'll tell you to switch to the Tower's frequency
- TWR will issue take-off clearance. After you are airborne, he'll transfer you to APP (or DEP)
- APP will guide you until you leave his/her airspace, when you will be handed over to the Center
- CTR will control you when you are en-route. If you pass borders or enter in another FIR, you will be handed off to another Center.

As you approach your destination:

- CTR will tell you to descend, then transfer you to the APP of the destination airport
- APP will guide you with vectors until you are established on the ILS of the landing runway, then you'll have to contact the Tower
- TWR will issue landing clearance, and hand you over to GND once you've vacated the runway
- GND guides you to the terminal and approves engine shutdown

C. ATC hierarchy

Of course, don't expect all these controllers to be present on the network at the same time, on the same airport. The 'hierarchy' is GND < TWR < APP < CTR (these four facilities are usually online so we'll deal only with them). If a facility is not present at an airport, the ones 'higher' in the hierarchy will take over the job.

Examples:

If there is TWR but no GND, the TWR will act as both GND and TWR, so he/she will issue route clearance, approve startup and guide you on the taxiways.

If there's only GND and APP, the APP will also act as TWR (but not as CTR!), he/she will also issue takeoff/landing clearances and manage VFR patterns.

If there's only APP (and no other facilities) at an airport, he'll act as GND, TWR and APP (but not as CTR) and he/she also issues route clearance, guides taxiing planes etc. apart of the APP job.

The CTR acts as GND, TWR and APP at any uncontrolled airfield (where isn't GND, TWR or APP) within the zone he/she controls. I highly recommend using Whazzup to view zones controlled by CTRs.

So, for example if there's only APP at an airfield, he'll issue you route, startup, taxi, takeoff clearance and guides you until you've reached a high altitude and left his/her airspace.

You should monitor the ATC positions; if the ATC that guides you goes offline, you have to contact the controller who is 'higher' in the hierarchy. For example, you are beginning descent to land at an airfield and CTR transfers you to APP. After a while, APP goes offline – in this case contact CTR again and he/she will control you until you land or until APP is back online.

D. Flying in uncontrolled area

Here are some examples of uncontrolled flights:

- you start from an airport where none of the GND, TWR, APP and CTR facilities are online
- you take off from an airport that has a TWR, but there's no APP or CTR in the region – in this case, after take-off you are in uncontrolled area as TWR can guide you only until you are airborne
- you are guided by an ATC but you cross a border and there's no Center in that region (the controller will tell you to 'switch to Unicom and resume own navigation')
- you over fly a region (with no landing intentions) that has no CTR (you have to contact APP only when you intend to land at an airport or if you over fly an airport at a low altitude, e.g. below FL120)

To find out if you are in an area controlled by a CTR, use Whazzup. For example, the airspace of Germany is controlled by five Centers, and you have to know which of them should be contacted (if online) when you fly over Germany.

If you are flying in an uncontrolled area:

- Switch to the Unicom frequency (122.800 – see section E about switching to ATC frequencies). All planes that fly with no ATC should use this frequency.
- Monitor TCAS and also take a look at ServInfo to know if there are other planes in your vicinity or other planes landing/taking off at your destination airport
- If there are others planes in the vicinity or at your destination airport, tell them from time to time your position and intentions using the SB text box (e.g. 'Traffic at LEMD is a 737 on final')
- Monitor ServInfo/Whazzup and the ATC directory (see section E) to know if a controller has logged on in your region or if you are approaching a controlled region. If so, contact him/her (he/she may also send you a private message asking to contact him/her) and tell that you are coming from an uncontrolled region

E. Switching to the ATC frequency

OK, so now you know which ATC should be contacted... so right click on SB and select ATC Directory. You will see a list of the controllers within your area.

Double-click on the call sign of the selected controller. Your radio will be tuned to his/her frequency (so you can communicate), you will receive the ATIS message (see section F) and if you are using Roger Wilco, it will also be automatically tuned to the voice channel of the ATC.

You may also switch frequencies by typing ``.atis (call sign)'` in SB or in the chat box.

One frequency will always be visible in the ATC Directory, and this is Unicom (122.800). If you are in an uncontrolled area, switch to this.

Important: if you are on an ATC's frequency (and you've contacted him/her), you MUST NOT leave that frequency without his/her consent! You may switch to another channel only when he/she asks it (for example TWR will ask you after takeoff to contact APP) or if the ATC has gone offline (in this case, contact the next controller in the hierarchy, or switch to Unicom if no ATC is available).

F. ATIS

ATIS stands for Automatic Terminal Information Service and contains information about an airfield. In reality, it is a recorded message that is broadcasted permanently over a specified frequency at an airport. In our case, it is a short text message of the ATC that is displayed when you switch to his/her frequency.

A typical ATIS message of a GND/TWR/APP controller may contain the following:

- Voice server address and channel (so that IVAP/SB3 will switch to the correct "frequency")
- Identification letter (this can be A, B, C... and is changed every time with the ATIS. The first ATIS of the day is A, the next will be B etc. A new ATIS is issued every time a significant change has been made). For example: ``Munich Approach Information BRAVO'` or ``Okecie Tower Information GOLF'`.
- Runway(s) in use
- Weather conditions (wind, ceiling etc), QNH
- Transition level (the altitude above which you have to switch to QNH1013)
- Specific instructions or procedures
- The name and rating of the controller

Since CTR controls a large area with several airports, a similar message cannot be established. The ATIS of a CTR usually contains only the voice server address and specific instructions (if any).

You can check a controller's ATIS message in the following ways:

- by switching to his/her frequency using the ATC directory
- by typing ``.atis XXXX_YYY'` in IVAP/SB3 (note the period), for example ``.atis EPWA_APP'`
- by clicking on the controller's name in ServInfo (note: the data ServInfo displays may be outdated)

When you contact a controller, tell him/her that you have copied the ATIS message with the respective identification letter (e.g. ``.information BRAVO copied'`).

3.3 ATC – Pilot Communications

This is the most important part. You have to use the correct phraseology when speaking with Air Traffic Control and you have to understand his/her instructions. This section will present an online flight with typical messages (controller messages will be written in green, pilot messages in blue).

In this section we present communication with every ATC you may encounter during this typical flight; of course if a facility is missing, contact the one higher in the hierarchy or, if not available, switch to Unicom.

If you are using TS2/AVC, say your messages in the microphone; otherwise type them in the IVAP/SB3 window. Note that even if you use voice, there might be controllers who use text because of technical or other reasons; in this case you have to use text.

If you use **text**, you may abbreviate your message, as this is allowed when flying online. For example instead of 'EHM123, holding short runway 14, ready for departure' type 'EHM123, h/s rwy 14 rdy for dep'. Controllers will likely also use abbreviations in their text messages. See Section J for a list of the most common abbreviations.

General ideas

You have to begin all your transmissions with your call sign, except when you are reading back instructions – in this case, place your call sign at the end of the transmission. For text, your call sign automatically appears at the start of all your transmissions. *You have to **read back** (repeat to the controller) all his/her instructions that contain clearances, headings, altitudes, frequencies, squawk codes, altimeter settings, hold short or hold position instructions, or any specific information or procedures.* For example:

Pilot: **EHM123**, ready for taxi

ATC: **EHM123**, taxi to holding position runway 09R via taxiways N T

Pilot: Taxi to holding position runway 09R via N T, **EHM123**

On initial contact with an ATC station, you have to state his identification. For example:

Pilot: **Schiphol Delivery**, EHM123

ATC: **EHM123**, Schiphol Delivery, go ahead

If a controller communicates with you, he/she will begin the transmission with your call sign. He/she may put his/her call sign after yours (on initial contact), for identification.

Pay attention to messages beginning with '**All stations**', these are for all pilots that are on the controller's frequency. Note that you should not read back these transmissions. For example:

ATC: **All stations**, current information is BRAVO

'**Advise**' means 'please tell if...'. Example:

ATC: **EHM123**, **advise** you have information DELTA

Pilot: **Affirm**, EHM123

'**Roger**' means 'I have received and understand your last transmission' (in reply to information) and '**Wilco**' means 'I received and understand your last transmission AND I will comply' (in reply to an instruction). Note that you can't say 'roger' or 'wilco' in reply to an ATC instruction or clearance; you must read these back!

'**Affirm**' and '**Negative**' mean 'yes'/'correct' and 'no'/'incorrect' respectively. Examples:

ATC: **EHM123** **advise** you have visual contact with the airfield.

Pilot: **Affirm**, EHM123 (or **negative** if there's no visual contact).

ATC: **EHM123**, taxi to holding position runway 09R via taxiways N T

Pilot: Taxi to holding position runway 19R via taxiways N B, EHM123

ATC: **EHM123**, **negative**, taxi to holding position runway 09R via taxiways N T

Pilot: Taxi to holding position runway 09R via taxiways N T, EHM123

'**Stand by**' is used when information or a clearance is to be expected later. Example:

Pilot: **EHM123**, ready to copy IFR clearance to Stockholm (your destination)

Controller: **EHM123**, **stand by** for your clearance

Pilot: **Standing by**, EHM123

'**Correction**' is said when an error was made during the transmission. Examples:

Controller: EHM123, turn right heading 120, correction, turn right heading 150.

Pilot: Turn right heading 150, EHM123

Controller: EHM123, cleared to taxi to holding position runway 23 via taxiways K P Z

Pilot: Cleared to taxi to holding position runway 23 via taxiways K B... correction... taxiways K P Z

'Disregard' is used when incorrect information or an incorrect instruction was issued. Examples:

Controller: EHM123, descent to flight level 300

Pilot: Leaving flight level 340 , descending to FL300, EHM123

Controller: EHM123 **disregard**, maintain FL340, **break break**, BAW223, descent to FL300

Pilot: Maintain FL340, EHM123

BAW pilot: Leaving FL360, descending to FL300, BAW223

*Note: **break break** means that the ATC issues an instruction for an aircraft right after communicating with another aircraft (without releasing the transmission button of his/her radio).*

'Say again' means that you didn't understand the message and ask the ATC to repeat it.

Pilot: EHM123, ready for taxi

Controller: blah blah blah blah blah

Pilot: **Say again**, EHM123

Controller: EHM123, taxi to runway 16 via taxiway E and hold short

Pilot: Taxi to runway 16 via taxiway E and hold short, EHM123

'Expedite' means to perform an instruction fast, to hurry up. Examples:

Controller: EHM123, **expedite** vacating the runway

Pilot: Expediting, EHM123

Controller: EHM123, you are too high for the approach, expedite your descent.

Pilot: Expediting descent, EHM123

'I say again' is used when you have a important message that concerns the safety of operations. Examples:

Pilot: EHM123, engines losing power, **I say again**, engines losing power.

Controller: EHM123, what are you doing?! Turn left heading 030, **I say again**, turn left heading 030!

Controller: EHM123, go around, **I say again**, go around

B. Route clearance

So to resume quickly; plan your flight, get the maps, start Flight Simulator and your pilot client software, place your plane at the gates at the departure airport, file your flight plan. Ensure you are Squawk Standby and connect to the network. Route clearance is the first thing you should ask for when you start a flight.

As previously mentioned, DEL is a very rare position on the networks, so most of the time you have to contact GND and receive his/her ATIS message. If you use RW or TS, it is advisable to do a radio check (on initial call). For this example, we contact a DEL station, but you can do a radio check on every station you want.

Pilot: Schiphol Delivery, EHM123, radio check on 121,97 (always mention the frequency)

Controller: EHM123, Schiphol Delivery, copy you five by five (this means that he/she copies you loud and clear; four by five would mean he does not read you perfectly etc.)

Note: 5 by 5: perfectly readable; 4 by 5: readable; 3 by 5: readable, but with difficulty; 2 by 5: readable now and then; 1 by 5: unreadable.

If you cannot hear the controller (or he/she can't hear you) try to adjust your system settings; if it doesn't work you have to switch to text.

OK, let's get to the request of the route clearance. Make sure you have pencil and paper and ask for route clearance. Mention your position on the ground and that you have copied the controller's ATIS message.

Pilot: EHM123, at the main terminal (your aircraft position), information ALPHA copied, ready to copy the IFR clearance to London Heathrow (your destination)

Note: I didn't state the call sign of the ATC station, because I already did so when I requested the radio check

A typical response contains:

- Clearance to destination
- Standard Instrument Departure (SID) you have to fly
- Initial altitude (if not given by ATC, climb to the altitude as indicated on your SID chart)
- Transponder "Squawk" code

It may contain more features like an altimeter settings, departure frequency etc. etc. Remember that you have to read back the clearance.

ATC: EHM123, you are cleared to London Heathrow via the BERGI2S departure, climb initially to 7000 ft, squawk 5412

Pilot: Cleared to London Heathrow via the BERGI2S departure, initial climb to 7000 ft, squawk 5412, EHM123

ATC: EHM123, read back is correct. Contact Schiphol Start-up on 121,65 when ready for start-up.

Note: As mentioned earlier, a DEL or SU station is most of the time now available. In that case, all these operations are performed on the GND frequency.

BERGI2E is the standard instrument departure (SID) issued to you. SIDs are proscribed routes that planes should follow when leaving an airport and can be seen on the SID charts you've downloaded (see Section 3.1). Don't forget to dial 5412 into your transponder.

After you read back a route clearance, the controller will say 'Read back correct' (or 'Negative' if you didn't read back the clearance correctly).

If you don't have the charts, you can request vectors from ATC, so you will be guided with radar vectors after departure. This is within your rights. Example:

Pilot: EHM123, no charts sir, will request vectors after departure.

ATC: EHM123, roger, expect vectors after departure.

Once you've received the clearance, you are ready to start your engines and taxi to the active runway.

C. Ground Operations

First, you have to ask for start-up and push-back clearance (push-back is needed e.g. when you are at a gate). It is advisable to mention your current position.

Note: In the previous example, the pilot is handed over to Schiphol Start-up. This station is not available on VATSIM and IVAO most of the time (and only the large fields have DEL and SU). In that case, you have to ask the permission from Ground Control (GND). In the examples below we simulate that SU is not available.

Pilot: Schiphol Ground, EHM123, at gate D47, ready for startup and pushback.

ATC: EHM123, startup and pushback approved, call me back when ready to taxi.

Pilot: Startup and pushback approved, wilco, EHM123

Note: The above mentioned 'wilco' means that we understand the instructions and we will comply to it.

Start your engine(s) and push back the aircraft from the gate. IVAP has a pushback mode that gives a great deal of control over the pushback. SB3 users can use SLEW or the Flight Simulator pushback mode.

IMPORTANT: Using SLEW while online is allowed only for push-back, in all other cases it is prohibited!

Pilot: EHM123, ready to taxi

ATC: EHM123, taxi to holding position S6 runway 24 via A A7 (this means that you may taxi via taxiways A and A7 to the holding position S6 (indicated on your chart), but you are not allowed to enter the active runway! Instead, hold short and report ready for departure).

Don't forget to read back the clearance.

Pilot: Taxi to holding position S6 runway 24 via A A7, EHM123

Another example of a taxi clearance:

ATC: EHM123, taxi to holding position runway 33R via A H E, hold short runway 29 (this means that you have to cross another runway (rwy 29) while taxiing to runway 33R. You have to hold short runway 29 and ask for clearance to cross it).

Pilot: Taxi to holding position runway 33R via A H E, hold short runway 29, EHM123

...

Pilot: EHM123, holding short runway 29 (You begin with your call sign, because you take the initiative to make contact).

OR

Pilot: EHM123, approaching runway 29 (If it's not busy, you can announce that you are approaching the runway that you have to cross, so you don't have to stop the aircraft)

ATC: EHM123, continue taxi, cleared to cross runway 29, report vacated.

Pilot: Cleared to cross runway 29, wilco, EHM123

...

Pilot: EHM123, runway 29 vacated.

Using Top-down view is recommended for taxiing, this way you can see the whole airfield (taxiways, runways, buildings) and compare it with your airport diagram. Remember, do not exceed 25 kts!

If you don't have the airport diagram, let ATC know it!

ATC: EHM123, taxi to holding position S6 runway 24 via A10 B A9 A A8 B

Pilot: Unable to comply, I don't have an airport chart, EHM123

ATC: EHM123, taxi to holding position S6 runway 24 via own discretion (don't forget to read back)

Pilot: Taxi to runway 24 via own discretion, EHM123

Alternative:

ATC: EHM123, taxi to holding position S6 runway 24, follow the Air France A340 in front of you

'Hold position' means to stop the aircraft, e.g. to give way to another aircraft.

ATC: EHM123, hold position, give way to the A340 coming from your 9 o'clock.

Pilot: Hold position, EHM123

ATC: EHM123, continue taxi

Pilot: Roger, EHM123

'Backtracking' is the procedure when you taxi ON the active runway to get into position (e.g. if you can't get there using a taxiway, and you have to use the runway). For example: Runway 04 at EHBK

Pilot: EHM123, holding short runway 08L, request clearance to backtrack the runway

ATC (can either be GND or TWR): EHM123, backtracking approved

Pilot: Backtracking approved, EHM123

D. Departure

Once you are holding short of the active runway, you will be handed over to the Tower (of course only if both GND and TWR are online).

Pilot: EHM123, holding short runway 24

ATC (GND): EHM123, contact Schiphol tower on 119,22

Pilot: 119,22, EHM123

At this point, select the ATC directory and click on the call sign of the tower, or simply enter '.atis (call sign)'. Now your radio and RW/TS will be tuned to the tower's channel.

Now it's time to squawk mode C, so the controllers can see information about your aircraft. Right-click the SB window and uncheck Squawk Standby. For IVAP: Set the mode selector to Tx.

Contact the tower, report your position, report the ATIS information copied and say if you are ready for departure.

Pilot: Schiphol tower, EHM123, at holding position S6, runway 24, copied information DELTA, ready for departure

The controller may first ask you to **'line up'**; in this case you may enter the active runway and line up for take off.

ATC: EHM123, Schiphol Tower, line up runway 24

Pilot: Line up runway 24, EHM123

Another 'line up' instruction could be:

ATC: EHM123, Schiphol Tower, behind the landing Fokker 70 line up runway 24 behind

Pilot: Behind the landing Fokker 70, lining up runway 24 behind, EHM123

This means that you may line up on runway 24 after the Fokker 70 has landed.

When the runway is clear of traffic and you are lining up. ATC could ask if you're ready once again.

ATC: EHM123, report when ready for departure

Pilot: Wilco, EHM123

...

Pilot: EHM123, ready for departure

IMPORTANT: Don't use the word 'take-off' in your message! During a flight, the word **'take-off'** is said only twice: when the controller issues the take-off clearance, and when you read it back. In all other cases, **'departure'** is used.

A take-off clearance will also contain information about the winds (reading back the wind is not mandatory).

ATC: EHM123, winds from 248 at 8 knots, climb initially to FL70, cleared for takeoff runway 24

Pilot: Climb initially to FL70, Cleared for takeoff runway 24, EHM123

The controller might also ask you to **'report airborne'** or **'report passing'** a particular altitude.

Once you have the clearance, you should take off without delay. If the controller asked to report when airborne say 'airborne'. Fly runway heading (unless otherwise instructed) and when you reach an altitude of 2000-3000 ft AGL, you will be handed over to the Approach/Departure controller (at Schiphol you have to switch to Departure automatically, but for this tutorial, we simulate you will be handed over).

Pilot: Schiphol Tower, EHM123, at holding position S6, runway 24, ready for departure

ATC: EHM123, Schiphol Tower, winds variable at 10 kts, cleared for take off runway 24, report airborne.

Pilot: Cleared for take off runway 24, wilco, EHM123

...

Pilot: EHM123, airborne

Tower: EHM123, roger, radar contact

Pilot: Roger, EHM123

Tower: EHM123, contact Schiphol Departure on 119,05

Pilot: 119,05 , EHM123

Switch to the approach/departure controller's frequency, check the ATIS (if available) and contact him/her.

Note: At busy airports, there's a departure frequency for outbound traffic and an approach frequency for inbound traffic. At smaller airports, both outbound and inbound traffic is handled by the approach controller.

E. En-route

The APP or DEP will guide you up to 50-100 nm from the airport, and/or until you've reached your final flight level. After you tuned to the approach controller's channel (SB/TS) and read the ATIS message, contact him/her. If you received no instructions from the tower prior to takeoff, tell the APP/DEP controller your SID. If the tower gave you heading instructions, tell the APP/DEP controller this. Also tell him/her your current altitude and you intended altitude. The intended altitude can be the altitude that the tower instructed to you. If the tower did not give you an altitude instruction (that is normally the case), your intended altitude is the altitude as described on your SID chart (SID level).

Pilot: Schiphol Departure, EHM123, passing 3000 ft, climbing to FL70, BERGI1S departure

ATC: EHM123, Schiphol Departure, roger, squawk ident (the controller asks you to press the ident button of your transponder, so your call sign flashes on his screen)

Pilot: Identing, EHM123

ATC: EHM123, identified, climb to FL90, report passing FL70, turn to heading 331

Pilot: Climbing to FL90, wilco, turn to heading 331, EHM123

...

Note that '7000 ft' is the altitude you were initially cleared in the route clearance. You may climb to a higher altitude only if the controller approves it.

Maximum allowed speed below 10000ft (or FL100) is 250 kts, however you can get clearance for 'high speed' and fly as fast as you want:

Pilot: EHM123, request high speed

ATC: EHM123, high speed approved (or Negative if high speed isn't possible)

Pilot: High speed approved, EHM123

BERGI1S is the SID you must fly. However, if you report (when receiving route clearance) that you aren't familiar with the SID or don't have charts, you will be given vectors; for example:

ATC: EHM123, turn right heading 100 to intercept FLR radial 075

Pilot: Turn right heading 100 to intercept FLR R-075, EHM123

Let's get back to our example where EHM123 is about to report passing FL70

...

Pilot: EHM123, passing FL70, climbing to FL90

ATC: EHM123, roger, continue climb to FL180, contact Amsterdam Radar on 124,87

Pilot: Climbing to FL180, 124,87, EHM123

DEP clears you for a higher altitude and passes you to Amsterdam Radar. Use altitudes (e.g. 7000 – pronounced 'seven thousand') below the transition level and flight levels (e.g. FL180 – pronounced 'flight level one eight zero') above transition altitude. Above the transition altitude, remember to set your altimeter to pressure altitude setting (1013 or 29,92)

Pilot: Amsterdam Radar, EHM123, passing FL80, climbing to FL180, heading 331

ATC: EHM123, Amsterdam Radar, radar contact, continue as filed

Pilot: Roger, continue as filed, EHM123

...

Pilot: EHM123, maintaining FL180

ATC: EHM123, climb to FL280

Pilot: Leaving FL180, climbing to FL280, EHM123

Note: A lot of people only say "Climbing to FL280, EHM123", but it is important to let the controller (and other surrounding aircraft) know which level you are leaving.

Important: You have to comply with all instructions the ATC issues to you! For example if the ATC instructs you to proceed to a specific waypoint that is not contained in your flight plan, you must proceed to that waypoint immediately and forget about your flight plan!

Some typical communications between the pilot and APP/DEP/CTR (RADAR) while en-route:

ATC: EHM123, climb and maintain FL330, report passing FL270

Pilot: Leaving FL210, climbing to FL330, wilco, EHM123

...

Pilot: EHM123, passing FL270, climbing to FL330

ATC: EHM123, roger

Note: When reporting your altitude, also report your intended altitude.

ATC: EHM123, turn right 030 (this means that you have to 'add' 30 degrees to your heading, for example if your previous heading was 280, your new heading will be 310)

Pilot: Turn right 030, EHM123

ATC: EHM123, turn right heading 030 (this means that you have to turn right until your heading is 030; it does not depend on your previous heading!)

Pilot: Turn right heading 030, EHM123

ATC: EHM123, proceed direct TGM (this means that you have to fly direct to the TGM navaid.)

Pilot: Proceed direct TGM, EHM123

ATC: EHM123, report 10 nm inbound TGM (you will have to report when your distance from TGM is decreased to 10 nm, BEFORE passing TGM)

Pilot: Wilco, EHM123

...

Pilot: EHM123, 10 nm inbound TGM

ATC: EHM123, report 10 nm outbound TGM (you will have to report when your distance from TGM has increased to 10 nm, AFTER you've passed TGM)

Pilot: Wilco, EHM123

...

Pilot: EHM123, 10 nm outbound TGM

ATC: EHM123, traffic is A320, eastbound 8 nm, 1000 ft above, report traffic in sight.

Pilot: Traffic in sight, EHM123

OR

Pilot: Looking out, EHM123

OR

Pilot: Traffic NOT in sight, EHM123

ATC: EHM123, reduce speed to 220 knots

Pilot: Reducing speed to 220 knots, EHM123 (read about speed restrictions in Section 3.4)

Pilot: EHM123, request direct CLJ (this means you wish to proceed to the CLJ navaid from your current position)

ATC: EHM123, proceed direct CLJ (or Negative if the request is denied)

Pilot: Proceed direct CLJ, EHM123

Pilot: EHM123, request descent

ATC: EHM123, descend to FL120 (or 'stand by' or 'Negative')

Pilot: Leaving FL180, descending to FL120, EHM123 (don't forget to mention your current flight level)

ATC: EHM123, expedite descent (this means that you have to descend faster, with a higher VSI)

Pilot: Expediting (descent), EHM123

If you leave a CTR (Radar controlled airspace) and enter in an uncontrolled area (where not Radar station is online), he/she will say:

ATC: EHM123, you are leaving my airspace, no ATC in the UK (for example), switch to Unicom and resume own navigation

Pilot: Roger, resuming own navigation, EHM123

Switch to Unicom and monitor IVAE/SB3/Whazzup/ServInfo to see if a controller comes online or if you reach some other controlled area. The controller may also send you a message in private asking you to contact him/her.

ATC: EHM123, London Radar online, please contact me on 125,5

...

Pilot: London Radar, EHM123, FL280

ATC: EHM123, London Radar, radar contact

Pilot: Roger, EHM123

Inexperienced pilots often mistake 'continue as filed' for 'resume own navigation'. There's a huge difference between them! 'Continue as filed' authorises you to proceed according your flight plan while remaining under radar service and 'resume own navigation' means that you are entering uncontrolled airspace and need to take responsibility for where you are and what you do.

F. Initial approach to an airport

When you are close to your destination (30-100 nm, depending on your cruise altitude), Radar will tell you to descend (he/she may also give vectors) and tells you to contact the APP of the airport (of course, only if somebody is online as APP – if not, the CTR will also act as APP and guide you until you are on final). Let's get back to our example of our aircraft that departed from Schiphol and is on its way to London; currently in contact with London Radar.

ATC: EHM123, descend to FL200

Pilot: Leaving FL280, descending to FL200, EHM123

...

ATC: EHM123, continue descent to FL150, turn right heading 266

Pilot: Descend to FL150, turn right heading 266, EHM123

...

Pilot: EHM123, approaching FL150 (this way we avoid that we have to level off before ATC gives permission to descend further)

ATC: EHM123, continue descend to FL80, reduce speed to 220 kts

Pilot: Continue descend to FL80, reducing speed to 220 kts

...

Pilot: EHM123, maintaining FL80

ATC: EHM123, roger, contact London Approach on 118,05

Pilot: 118,05 , EHM123

The Radar controller handed us over to Approach Control. Get the ATIS of London Approach and make contact.

Pilot: London Approach, EHM123, maintaining FL80, heading 266, copied information JULIET

ATC: EHM123, London Approach, radar contact, proceed direct LAM, maintain FL80, ILS approach runway 27R, information JULIET correct

Pilot: Proceed direct LAM, FL80, ILS approach runway 27R, EHM123

...

ATC: EHM123, descend to 4000 ft, QNH 1004, transition level 90

Pilot: Leaving FL80, descending to 4000 ft, QNH 1004, EHM123

As you may know, transition level (used at arrivals) is the flight level below which you have to set your altimeter to the local indicated QNH setting (1004 in this example). Transition altitude (used at departures) is the altitude above which you have to set your altimeter to QNH 1013. You don't have to read back the transition level when given by ATC.

The approach controller will guide you with vectors and occasionally tells you to descend until you will be established on the final for landing.

You may receive a *crossing restriction*. This means that you may descend at own discretion, but you have to at a certain altitude when passing a navaid or intersection. Example:

ATC: EHM123, cross LAM at 6000 ft

Pilot: Cross LAM at 6000 ft, EHM123

If you can't comply, let the ATC know this, and he/she will tell you when to begin descent.

Pilot: Unable to comply, EHM123

Also, you might be guided with a STAR. A Standard Terminal Arrival is a prescribed route used by pilots to get on final (similar to the SID, but for arrival instead of departure).

ATC: EHM123, fly direct LOGAN, intercept LAM3A arrival, descend to 6000 ft

Pilot: Proceed direct LOGAN to intercept LAM3A arrival, descend to 6000ft, EHM123

Standard Approaches (STARs) are mainly used only at very busy airports (e.g. during fly-ins) on IVAO and VATSIM, in other cases you will likely be guided with radar vectors. If you are instructed to follow a STAR but you don't have the chart, ask for radar vectors.

If you arrive at busy airports, you might receive instructions like:

ATC: EHM123, make left orbit (or left 360) for separation (you have to make a 360-degree turn to the left)

Pilot: Left orbit, EHM123

ATC: EHM123, hold at TPS as published, report passing TPS

Pilot: Hold at TPS as published, wilco, EHM123

If you don't have the chart, the controller will explain how to hold over TPS; for example:

Pilot: EHM123, request holding instructions

ATC: EHM123, hold at TPS at 5000 ft, inbound track 160, left hand pattern, 220 kts, 1 min legs.

Joining and leaving the holding pattern has to be reported to ATC. Example:

Pilot: EHM123, overhead TPS, 5000 ft, joining the hold

ATC: EHM123, roger

...

ATC: EHM123, after completing this hold proceed to ABC

Pilot: After completing the hold to ABC, EHM123

...

Pilot: EHM123, passing TPS, proceeding to ABC

ATC: EHM123, roger

G. Establishing on ILS and landing

You should know which runway to expect at the destination airport from the approach controller's ATIS message (he/she may also repeat it to you, e.g. 'expect radar vectors for runway 27R at Heathrow').

The approach controller will guide you with radar vectors (or you fly a STAR), then clears you to make an ILS approach.

ATC: EHM123, turn right heading 240, descend to 2500 ft, cleared for the approach runway 27R, report established.

Pilot: Turn right heading 240, leaving 4000 ft descending to 2500 ft, cleared for the approach runway 27R, wilco, EHM123

Now you can make an instrument approach and report the controller once you are established. He/she will hand you over to the tower who will issue the landing clearance.

Pilot: EHM123, established ILS runway 27R

ATC: EHM123, roger, contact tower on 118,5

Pilot: 118,6 , EHM123

...

Pilot: Heathrow tower, EHM123, established ILS runway 27R

ATC: EHM123, roger, number 2, report outer marker

Pilot: Number 2, wilco, EHM123

Note: Cleared for the approach, does not mean that you are cleared to land. Being number 2 means that another aircraft is in front of you who has to land first.

...

Pilot: EHM123, outer marker

ATC: EHM123, roger, cleared to land runway 27R, after landing expedite vacating the runway, wind 268 at 8 knots

Pilot: Cleared to land runway 27R, wilco, EHM123

When multiple runways are in use, regulations describe that the runway designator is stated before the landing clearance. The ATC takes the initiative for this. For example:

ATC: EHM123, runway 27R, cleared to land, after landing expedite vacating the runway, wind 268 at 8 knots

Pilot: Runway 27R, cleared to land, wilco, EHM123

You may also request an alternative type of approach (e.g. if your ILS display isn't working), for example a visual one (note that you can request a visual approach only if visual meteorological conditions prevail):

Pilot: EHM123, requesting visual approach

ATC: EHM123, cleared for the visual approach runway 25, report runway in sight.

Pilot: Cleared for the visual approach runway 25, wilco, EHM123

...

Pilot: EHM123, runway in sight

ATC: EHM123, roger, winds from 256 at 14 knots gusting up to 25 knots, cleared to land runway 25

Pilot: Cleared to land runway 25, EHM123

If you cannot land (e.g. you are too high, you have problems or the weather is too bad), report a missed approach and go-around. The tower will then hand you over to the approach controller, who will guide you on the IFR pattern.

Pilot: EHM123, going around

ATC: EHM123, climb to 3000 ft, continue on runway heading, contact approach on 126,95

Pilot: Climb to 3000 ft on runway heading, 126,95, EHM123

The tower may also instruct you to go around, e.g. if an aircraft is blocking the runway.

ATC: EHM123, go around, I say again, go around, traffic on the runway!

Pilot: Going around, EHM123

Once you've landed safely, vacate the runway via the first available taxiway (or as instructed by the ATC) and hold position. Note that you may need to backtrack the runway to vacate at some airports. At some airports, you have to switch to the GND frequency without TWR instruction.

Pilot: EHM123, runway 27R vacated

ATC: EHM123, contact ground on 121,9

Pilot: 121,9, EHM123

Squawk standby then contact the ground controller who will guide you to the parking or gates.

H. Ending the flight

So you vacated the runway and you are now on the frequency of the ground controller. All you have to do is to taxi to the terminal and shut down the engines.

Pilot: EHM123, runway 27R vacated at 21 (21 is the holding position you are current located)

ATC: EHM123, taxi to gate B19 (the controller does not give route instructions, so you have to taxi according to the published taxi route)

Pilot: Taxi to gate B19, EHM123

If you don't have the airport diagram:

ATC: EHM123, taxi to gate 128 via W D, hold short runway 08R (this means that you have to cross another runway or to re-cross the runway you vacated while taxiing to the terminal)

Pilot: Unfamiliar with the airport, EHM123

ATC: EHM123, taxi to main terminal on own discretion, hold short runway 08R

Pilot: Taxi to the main terminal, hold short runway 08R, EHM123

Once you are at the terminal, report ready for shutdown.

Pilot: EHM123, at gate B19, request switch off

ATC: EHM123, switch off approved, flight plan closed at 03

Pilot: Shutdown approved (and flight plan closed), EHM123

03 in this case is the time when the flight plan was closed: in minutes past the hour e.g. 21:03.

After this, you can disconnect from the flight simulation network and exit Flight Simulator, or file a new flight plan and go for another flight.

Well, now you have a basic idea about flying on-line. You might print this manual for reference to use during your first online flights. If you are inexperienced, put in the Remarks box of the flight plan 'Newbie pilot' and controllers will pay more attention to you. You will find most controllers and pilots very helpful and you can learn a lot if you ask their help. If the procedures, phraseology or software usage isn't clear for you after you have read this, see Section 4 for examples of online flights. And don't forget to check Section 3.4 for the rules of online flying.

Remember to read Section 4.7 of the EuroHarmony Operations Manual that contains further information about flying online.

I. Emergency Procedures (distress messages)

You may simulate and report an emergency when flying online, however emergencies are not welcome during fly-ins or similar events as it may disrupt the normal flow of traffic.

If you have an emergency within a controller area and need immediate assistance, squawk 7700 and report the nature of emergency, and if necessary, other details (aircraft type, altitude, heading etc).

Although emergency situations are very stressful, try to provide the ATC with a detailed distress call. A good distress call contains:

- I. Mayday, Mayday, Mayday
- II. Call sign of the station you are talking too; or say "All stations"
- III. Your own call sign
- IV. What happened (oil leak, rough running engine)
- V. Intentions of the captain
- VI. Position, altitude en course of the aircraft
- VII. Other relevant information

For example:

Pilot: [Mayday, Mayday, Mayday, All stations, EHM123, engine 2 is out, diverting to Rotterdam, current position is 2nm south east of Dordrecht, 2000 ft, heading 045, good visibility](#)

The ATC will give you all the information you need and they will vector you to the airport. When you, your passengers and/or your aircraft are not in immediate danger, but you do have an urgency situation then don't do a Mayday call, but a PAN PAN call instead.

When we talk about an act of unlawful interference (hijack) then set squawk code 7500. If the hijack emerges into an emergency situation then squawk 7700. Simulating an hijack is not allowed during online flying.

Note: From October 2005, the term "holding position" will be replaced by "holding point" to avoid misfiring with "hold position". The term "holding point" is already used in the United States.

J. Abbreviations in text communication

It's not easy to fly the plane, comply with the instructions and type the read backs and requests in SB when using text, so pilots who use text prefer abbreviations. The following abbreviations are accepted and most commonly used in text communication:

a/c	aircraft	kias	knots indicated airspeed
aff	affirmative (yes)	kt or kts	knots
alt	altitude	mm	middle marker (c. 2nm from threshold)
app	approach	nm	nautical miles
c/m	climb and maintain	om	outer marker (c. 8nm from threshold)
clrd	cleared	p/b	pushback
dct	direct to	rgr	roger
dep	departure	rwyt	runway
d/m	descend and maintain	sq	squawk
est	established	s/d	shutdown
fl	flight level	s/p	pushback and startup
fp	flight plan	s/u	startup
hdg	heading	wilco	will comply
h/s	hold short	wx	weather

These are the most common abbreviations; you may encounter others in addition.

Examples:

Pilot: **Ready for s/u and p/b** (if you use text, you don't have to type your callsign in your transmissions as the ATC will see who sent the message)

Controller: **EHM123, s/u and p/b approved, call for taxi**

Pilot: **s/u and p/b approved, will call for taxi**

Controller: **EHM123, right hdg 280, d/m 3000, clrd for ILS app rwy 25, report est**

Pilot: **hdg 280, d/m 3000, clrd for ILS app rwy 25, will report est**

For an example of a flight with text communication, check Section 4.3.

Important: When you use text and receive an instruction from the controller, begin executing it first and read back only after! For example, the ATC instructs you to turn right to a heading of 090. If you begin typing the readback, you'll lose 5-10 seconds (typing prevents you of controlling the plane) and you may not be available to lock on the ILS, you may get too close to mountains, you may create a conflict etc. So read back only after you began executing the instruction!

K. Transmitting numbers and letters in voice communication

1. Say numbers separately! For example, a frequency of 118.250 will be read as 'one one eight point two five zero' or FL190 as 'flight level one niner zero'. The only exceptions are complete thousands, e.g. 7000 is read as 'seven thousand' (but 7001 is read as 'seven zero zero one!')

2. Number 9 will be pronounced as 'niner'

3. Letters are spelled as follows:

A – Alpha	N – November
B – Bravo	O – Oscar
C – Charlie	P – Papa
D – Delta	Q – Quebec
E – Echo	R – Romeo
F – Foxtrot	S – Sierra
G – Golf	T – Tango
H – Hotel	U – Uniform
I – India	V – Victor
J – Juliet	W – Whiskey
K – Kilo	X – X-ray
L – Lima	Y – Yankee
M – Mike	Z – Zulu

4. If you don't know the full name of a VOR or NDB, you should spell the (consisting of 2 or 3 letters); e.g. say 'sierra lima charlie' or 'Salt Lake City' for SLC VOR

5. Don't spell intersection names (5 letters), pronounce them as they are written; e.g. say 'netul' for NETUL

6. You should use full names for SID/STARs, or failing that spell them including the LAST letter; e.g. say 'Southampton two golf' or 'sierra alpha mike two golf' for SAM2G

7. Spell the letter that identifies a taxiway, ATIS etc, e.g. 'taxiing via FOXTROT', 'information MIKE copied'

8. If there are left, center and right runways, say 'left', 'center' and 'right' (not LIMA, CHARLIE and ROMEO!), e.g. runway 09L should be pronounced as 'zero niner left' and 09R as 'zero niner right'

9. If you use an airline call sign, say the airline name then spell the flight number, e.g. for EHM2301 say 'EuroHarmony two three zero one'

10. If you use a registration as call sign (when you fly a private aircraft), spell it when communicating with the ATC, e.g. say 'papa hotel uniform echo foxtrot' if the registration is PH-UEF. If the ATC abbreviates it, you should follow suite; for example:

Pilot: **Papa hotel uniform echo foxtrot** with you, 6000 feet, speed 140

Controller: **Papa echo foxtrot**, radar contact, turn right heading 020

Pilot: Turn right heading 020, **papa echo foxtrot** (now you may abbreviate it too)

3.4 Things to keep in mind

Here is a collection of some of the written and unwritten rules and general tips of online flying. Of course you are also expected to read and understand the Code of Conduct (VATSIM) or Rules and Regulations (IVAO).

- Always log in with your real name to the network. Nicknames, abbreviations are not accepted.
- Connect only when you intend to finish your flight (and not for just a takeoff etc)
- It is not allowed to log on more than once simultaneously (e.g. as two ATC, or as a pilot and an ATC)
- Always put your plane at the gates or parking before you connect to the network and with engine(s) shut down
- Using the SLEW mode while online is not accepted (except for push-back from the gate)
- Do not pause while online as it may disrupt the normal flow of traffic (imagine the approach controller who succeeds to make separation for all planes at a busy airport, and then someone will pause on final)
- You should not leave your computer while flying, especially in a controlled area as you might receive important information or instructions any time. If you have to leave the simulator for a short time during the flight, let the ATC know it!
- Simulating a hijack is not permitted and may lead to exclusion from the network
- Military flights are allowed, but it's forbidden to simulate war actions
- Don't use vulgar or offensive language, don't swear or flame or you will be excluded from the network
- If you are offended by the messages or by the behavior of a pilot or ATC, you may contact a Supervisor and explain him/her the situation. Use ServInfo to find Supervisors, they have the rank SUP and have a green star next to their name.
- Don't increase your flight simulation rate, even if you are in an uncontrolled airspace, unless you've got permission from the ATC
- If you are in a controlled airspace, don't perform flight operations without the approval of the ATC (so no unauthorized taxi, take-off, landing) and don't leave his/her frequency without his/her permission
- Don't update the real weather, SB will do it automatically
- Don't exceed 25 kts while taxiing on the ground
- Don't exceed 250 kts below 10000 ft (unless you get permission from the ATC for high speed)
- Fly a plane that you know well. Don't experiment with new aircraft or panels while flying online.
- We recommend pilots keep a paper and pencil near when flying to note down clearances (like route clearance, SID name), times (engine start, takeoff), routing etc.
- If you use voice, don't interrupt the transmissions of other pilots/controllers! If a controller issues an instruction for another pilot, wait for the pilot to read back before transmitting your message.
- Use voice if possible. It's much more realistic and doesn't give the ATC a heavy workload (for an ATC, it's easier to control 10 planes simultaneously on voice than to control 3 planes on text). But if you can't use voice for technical reasons, or if you are not familiar yet with the ATC-pilot communications (your first 3-4 online flights), use text
- If you use text, enter in your flight plan TEXT ONLY (in the Comments box)
- If you'd like to send a private message to a pilot or controller via your pilot client, type `.msg` (call sign) (message)', for example `.msg EHM789 Hi there!` IVAP has a private chat facility built in – type `.chat` (call sign)' (`.chat EHM789`) to start the chat session, then use `+(call sign)` (`+EHM123`) to add other pilots to your side of the chat session, and `-(call sign)` (`-EHM123`) to remove pilots from your chat session.
- If you get disconnected from the network, it may be that you can't reconnect immediately with the same call sign (you get an error message saying Call sign in use). In this case, use a similar one (like EHM656A instead of EHM656 or PH_ABC instead of PH-ABC).
- If the maximum take-off weight of your aircraft exceeds 300000 lbs, use the word HEAVY after your call sign in voice transmissions, like 'Harmony one zero five HEAVY'.
- Note that the metric system is used in the airspace of Russia, China and a few other countries (e.g. altitudes in meters, not in feet)
- You may encounter inexperienced controllers or pilots – be patient and helpful. Also other pilots and controllers will likely help you if you are inexperienced.

- We recommend flying in the evening if you want realism, and if that is possible for you. On weekday evenings there are about 150-300 pilots online and on weekends about 400-600 so you'll likely find controllers and other pilots in the zone where you plan to fly.
- If you are inexperienced, avoid heavy traffic areas and participation in events until you have gain a little experience of online flight (in high traffic, including events, pilots are expected to be experienced and professional); try to fly in controlled area with little or no traffic. Don't forget to include in the Comments box of your flight plan 'NEWBIE PILOT' so controllers will pay more attention for you and help when it's needed.
- If you'd like to be instructed in online flying procedures and voice communications, EuroHarmony management will be glad to help you! Just check the Online page for training events or the VFA page.

And finally remember that this is a hobby – so if you want to enjoy flying online, please try to be polite and professional and respect the rules.

I'm neither a pilot nor an ATC, only a fan of flight simulation; so there might be errors or incorrect descriptions of the procedures in this manual. Any comments, corrections or suggestions are welcome. Also the text is focused on commercial IFR flights, so it does not present in detail procedures like VFR patterns, helicopter operations etc.

As I've already said, this manual deals only with the software and procedures used when flying online. Apart from this, you are expected to be familiar with flying, navigation, patterns and you should be able to interpret charts, diagrams, METAR reports etc. I recommend you to check other tutorials too, you'll find several comprehensive manuals at the pages of VATSIM or IVAO.

Have a nice flight!

3.5 Your online flying checklist

Here's a brief overview of the essential actions that should be performed when flying online. It will help you greatly on your first online flights, but it could be useful for experienced pilots too.

1. Flight planning

- Select a flight from the timetable (you might want to check ServInfo to find out online ATC positions)
- Plan the flight using Flight Simulator's inbuilt flight planner or FSNav
- Try to get charts for the departure and destination airports

2. Before connecting

- Start Flight Simulator and enter your flight plan
- Select the aircraft you want to fly and start the flight
- Place your aircraft to a gate on the departure airport

3. Starting the pilot client and connecting

- Check ServInfo to find out which is the best server for you and note down the IP
- Start your pilot client (IVAP/SB3)
- Change call sign and file your flight plan
- Program the SB FMC if you plan to use it
- Squawk standby if necessary
- Connect to the network server
- Resend your flight plan

4. Departure (if ATC is available)

- Check the ATC list and switch to the channel of the ATC you should contact
- Make radio check
- Get route clearance
- Get startup and pushback clearance
- Write down the time (and optionally the fuel quantity) at engine startup
- Get taxi clearance
- Taxi as instructed and report ready for the departure
- Once you get takeoff clearance, Squawk C and write down the time of takeoff

5. En route

- Comply with the ATC instructions

6. Arrival (if ATC is available)

- After touchdown, vacate the runway as instructed. Write down the time of landing
- Once you have vacated the runway, Squawk standby
- Get taxi clearance to the terminal
- After arriving to the terminal, get shutdown clearance
- Write down the time (and optionally the fuel quantity) at engine shutdown
- Disconnect from the network
- Close your pilot client
- Disconnect from the multiplayer session you hosted

4. Sample flights

These are some typical flights over VATSIM or IVAO network, presenting every detail of a flight, from ATIS messages to communication with the ATC. I hope this section will help you to get more familiar with on-line flying. **Note that these flights are fictional, written for illustrative purposes, and they weren't actually flown online. Frequencies, nav aids, Tls, squawk codes may differ from the real ones used.**

4.1 Flight EHM-3702 LHBP - LROP

This evening I choose to fly a scheduled EuroHarmony flight between Budapest Ferihegy, Hungary (LHBP) and Bucharest Otopeni, Romania (LROP) with a Class 3 turboprop. First I make the flight plan which will be:

LHBP – XEGLI – BUDOP – EVRIK – NEPOT – NERDI – TUSET – LROP

I will fly at an altitude of FL170 (as it's eastbound I use an odd level) with a speed of 240 kts.

I plan my flights using maps and the inbuilt Flight Simulator flight plan creator, however FSNav is also recommended to plan the flight. I also search for maps and find some both for Budapest and Bucharest.

I start Flight Simulator, select the EuroHarmony ATR-72 and place it in the parking area. Then I start my pilot client (IVAP in this case), change my call sign to EHM702 (as the flight number is EHM-3702) and file my flight plan. Here is my flight plan:

The screenshot shows the 'ACARS - ICAO International Flight Plan' window. The title bar reads 'ACARS - ICAO International Flight Plan'. The main window title is 'International Flight Plan'. The IVAO logo is in the top right corner. The flight plan is displayed as follows:

- 7 aircraft ident.: EHM3702
- 8 flight rules: I
- type of flight: S
- 9 number: 1
- type of aircraft: AT72
- wake turbulence cat.: M
- 10 equipment: SDRY / C
- 13 departure aerodrome: LHBP
- departure time: 2015
- 15 cruising speed: N 0240
- level: F 170
- route: XEGLI BUDOP EVRIK NEPOT NERDI TUSET
- 16 destination aerodrome: LROP
- total EET: 0115
- alt aerodrome: LRBS
- other information: EUROHARMONY VA FLIGHT
- 19 endurance: E / 0400
- persons on board: P / 52
- pilot in command: C / GERGELY KOSA
- aircraft color and markings (MTL): A / DH8A Dash 8-100

Buttons at the bottom include 'Load...', 'Save...', 'Reset', 'Send FPL', and 'Cancel'.

I use ServInfo to find out who is online. I can see that the following ATC are online in the region I intend to fly: Budapest Tower, Budapest Approach, Budapest Center and Bucharest Approach (their call signs are: LHBP_TWR, LHBP_APP, LHCC_CTR, LROP_APP – of course if it's VATSIM and they use voice, they will insert a V in their call sign, like LHBP_V_APP. In this sample flight I'll simply write LHBP_APP and so on).

I switch back to Flight Simulator and connect to one of the servers of the selected network. A brief message will appear, letting me know that I'm logged in. At this time, my aircraft will show up on the radar screens of the controllers, parked at LHBP (they will only see a line as my aircraft, with no additional data, as I squawk standby).

There are several departing and arriving planes at Budapest communicating with the ATC, however I'll present here only the communications between the controllers and myself.

I resend my flight plan so controllers will be able to see it. Then I will contact the Tower. As you can see, there's no GND, so TWR will issue me route and taxi clearance.

Upon connecting, I receive the ATIS message of the Tower, which looks like this:

(voice server)/lhbp_twr	(this is the TS2 channel, IVAP will make TS2 switch to this)
Budapest Tower information ALPHA	(Facility name and ATIS identification letter)
Landing 31R, departing 31L, QNH 1006	(Runways in use, altimeter setting)
Squawk standby on ground	(No need to explain; pilots are required to do this at all airports)

When I'm ready, I check if the controller reads me (I am using voice) and request route clearance. My call sign on voice is 'EuroHarmony seven zero two', however in this document I'll just write EHM702.

EHM702: EHM702, Budapest Tower, good evening, radio check.

LHBP_TWR: Budapest Tower, EHM702 good evening, copy you five by five

EHM702: EHM702 information ALPHA copied, gate 34, ready to copy IFR clearance to Bucharest

LHBP_TWR: EHM702 you are cleared via XEGLI3G then as filed, initial 7000, squawk 2607 (of course you may know that this was pronounced as 'EuroHarmony seven zero two, you are cleared via xegli three golf then as filed, initial seven thousand, squawk two six zero seven)

EHM702: Cleared via XEGLI3G then as filed, initial 7000, squawk 2607, EHM702

LHBP_TWR: EHM702, read back correct.

I'll check the SID maps to see XEGLI3G (pronounced 'xegli three golf') departure, set the altimeter to 1006, then I report ready for startup, pushback and taxi. I don't forget to note down the startup, takeoff etc. times so later I can submit the pilot report at EuroHarmony's site without problems.

EHM702: EHM702, ready for start-up and push-back

LHBP_TWR: EHM702, start-up and push-back approved, call for taxi (= report when ready to taxi)

EHM702: Startup and pushback approved, EHM702 (I start the engines and use Slew for the push-back)

EHM702: EHM702, ready to taxi

LHBP_TWR: EHM702, taxi to runway 31L via ALPHA and hold short

EHM702: Taxi to 31L via ALPHA and hold short, EHM702

I taxi using taxiway A and when I'm at the holding point of 31L I squawk C (stop squawking standby) and report ready for departure (normally this is the point when GND would hand me over to TWR, but as no GND is online, TWR also acts as GND, as you could see).

EHM702: EHM702, holding short 31L, ready for departure

LHBP_TWR: EHM702, winds from 010 at 3 knots, cleared for take-off, report when airborne

EHM702: Cleared for takeoff, winds copied EHM702

After take-off I report airborne (as the Tower asked) and he'll hand me over to Approach.

EHM702: EHM702 airborne

LHBP_TWR: EHM702, radar contact, contact Approach on 118.100, have a nice flight

EHM702: 118.100 for EHM702, good bye

Upon contacting the APP, I'll receive the ATIS message. It's expected to be quite similar to the tower's ATIS (as it's about the same airfield). APP has also got voice, so RW will be switched to his frequency.

(voice server)/lhbp_app	(TS2 channel)
Budapest Approach information OSCAR	(Facility name and ATIS identification letter)
Landing 31R, departing 31L	(Runways in use)
QNH 1006, TL 110	(Altimeter setting and Transition level)

TL 110 means I have to reset my altimeter to QNH1013 if I pass 11000 feet (of course I should know the transition altitude when departing, but usually transition level is given).

EHM702: EHM702, Budapest Approach, with you, climbing to 7000, XEGLI3G departure

LHBP_APP: EHM702, good evening, radar contact, continue on XEGLI3G

EHM702: Continue on XEGLI3G, EHM702

LHBP_APP: EHM702, climb to FL120, report 5 nm inbound XEGLI (pronounced as 'EuroHarmony three seven zero two, climb to flight level one two zero, report five miles inbound xegli')

EHM702: Climb to FL120, will report 5 nm inbound XEGLI, EHM702

When I pass 11000 feet, I reset my altimeter to QNH1013.

EHM702: EHM702 reporting 5 nm inbound XEGLI, FL120

LHBP_APP: EHM702 continue as filed, contact Center on 133.200, good bye

EHM702: contact Center on 133.200, EHM702, good night

Now I contact Center, I receive the ATIS and I'll join the Center's channel. Here's the ATIS:

(voice server)/lhcc_ctr	(TS2 channel)
Budapest Center information HOTEL	(Facility name and ATIS identification letter)
For local weather check ACARS	(A center controls several airfields so it can't contain a specific weather information as weather conditions may vary from one airfield to another. Instead it tells me to check ACARS. This can be accessed in your pilot client.)

EHM702: EHM702 with you, good evening, 2 nm inbound XEGLI, FL120

LHCC_CTR: EHM702 radar contact, climb and maintain FL170, after XEGLI proceed as filed (this means that I will resume my flight plan after passing XEGLI, so I will continue to BUDOP intersection, then to EVRIK intersection etc, as it was in my flight plan).

EHM702: Climb and maintain FL170, after XEGLI as filed, EHM702

LHCC_CTR: EHM702, report passing BUDOP (the ATC asks me to report it as I will leave the Hungarian airspace when I pass BUDOP intersection)

EHM702: Will report BUDOP, EHM702

The ATC has no more instructions for me (new headings or fixes to insert in the flight plan), so I continue as filed until I reach the border at BUDOP. As there's no Center in Romania (only APP at Bucharest), the ATC will tell me to continue with own navigation until I reach the airspace of Bucharest Approach.

EHM702: EHM702, reporting BUDOP, FL170

LHCC_CTR: EHM702, you are leaving my airspace, continue with own navigation, frequency change approved

EHM702: Continue with own navigation, switching to unicom, EHM702

LHCC_CTR: EHM702, have a nice flight, good bye

EHM702: EHM702 köszö az irányítást és jó éjt (Controllers will be happy if you greet them in their native language. This message means 'thanks for the ATC and good night' in Hungarian.) :-)

I switch to UNICOM (122.800) and continue with own navigation as filed (EVRIK, NEPOT etc) until I reach the airspace of Bucharest Approach. There's only an Approach Controller, no Tower or Ground at the airport, so the APP will also act as TWR and GND.

I contact LROP_APP after I pass NERDI intersection, about 80 nm from Bucharest. I switch to 118.250 and get the following ATIS message:

(voice server)/lrop_app	(TS2 channel)
Bucharest Approach information N	(Facility name and ATIS identification letter)
TL40, QNH1010, visibility 3000, ceiling 700	(TL and some weather details)
Landing 08R, departing 08L	(Runways in use)
Advise if you don't have charts!	(I should tell him if I don't have charts for the airport)

I now know the altimeter setting for Bucharest, TL, runways in use and weather (note that SB also downloads regularly the weather, so I don't have to update it!). When I contact the controller, I report current position and that I have information N.

EHM702: EHM702, bună seara, FL170, 45 nm inbound TUSET, information NOVEMBER copied

LROP_APP: EHM702 hello sir, radar contact, expect vectors for ILS runway 08R

EHM702: Roger, EHM702

LROP_APP: EHM702, descend at own discretion, cross TUSET at FL50

EHM702: Will cross TUSET at FL50, EHM702.

This is a crossing restriction, the controller doesn't tell me when do I have to start descending, but I have to pass TUSET at FL50. We use FL50 (and not 5000) as the Transition Level at Bucharest is FL40 (remember – levels above TL, altitudes below TA).

EHM702: EHM702, FL50, passing TUSET

LROP_APP: EHM702, turn left to intercept FLR radial 103

EHM702: Left to intercept FLR radial 103, EHM702 (I'll fly towards FLR VOR at a heading of 103 degrees. This direction will take me through the localizer. Note that FLR is read as foxtrot-lima-romeo)

LROP_APP: EHM702, descend to 3000, altimeter 1010

EHM702: Descend to 3000 by 1010, EHM702 (This altitude is below the TL so I set the altimeter to the local setting, 1010, and use altitudes instead of levels)

LROP_APP: EHM702, descend to 2300, cleared for ILS approach runway 08R, report established

EHM702: Descend to 2300, cleared for ILS approach 08R, EHM702

EHM702: EHM702, reporting established 08R

LROP_APP: EHM702, winds from 090 at 12 kts, gusting up to 20 kts, cleared to land runway 08R

EHM702: Cleared to land runway 08R, winds copied EHM702.

Note that APP acts as APP, TWR and GND at this airport as the TWR or GND positions are not manned. After I land, I vacate the runway to the left, at holding point D. I don't forget to squawk standby.

EHM702: EHM702, runway vacated at DELTA, holding position

LROP_APP: EHM702, taxi to main terminal via taxiways CHARLIE MIKE LIMA, report for shutdown

EHM702: Taxi to main terminal via CHARLIE MIKE LIMA, will report for shutdown EHM702. (I'm expected to report when I'm parked at the terminal, ready for shutdown)

EHM702: EHM702, at main terminal, ready for shutdown

LROP_APP: EHM702, shutdown approved and flight plan closed, welcome and have a nice evening in Bucharest

EHM702: Shutdown approved and flight plan closed, EHM702 multumesc si la revedere (remember you may greet the controller in his/her native language if you want to be polite, but only if you can pronounce it well) :-)

It was easy, wasn't it? Now let's see another one.

4.2 Flight EHM-4140 EHAM-ESSA

It's Saturday evening, there are more than 500 people on VATSIM and there's heavy traffic at the major airports of Western Europe. I choose to fly a EuroHarmony scheduled flight that connects two of our hubs, Amsterdam Schiphol (EHAM) and Stockholm Arlanda (ESSA). I use the EuroHarmony Fokker 70, which is a Class 4 aircraft.

Although there's a lot of traffic (of course don't compare it to real-world traffic density), I will present here only the communications between me and the controllers, as in Section 4.1. I use voice and my voice call sign is 'EuroHarmony one four zero' (of course I'll write only EHM140 in this section).

My flight plan will be:

**EHAM SPY ANDIK GRONY BEDUM JUIST WELGO TUSKA VES ARNOV RADIS LOBBI BAK
DEGAV LABAN DETSO PELIT ARS ESSA**

I am allowed to abbreviating the flight plan by entering jet ways. For example, all intersections between **JUIST** intersection and **ARS** VOR are on the **UN873** jet way. Also between **SPY** and **JUIST** there's the **R12** jet way (jet way names usually include one or two letters followed by up to three numbers). So the flight plan I enter into SB3 looks like this:

The screenshot shows a 'File Flight Plan' dialog box with the following fields and values:

- Flight Type: IFR
- Departure Airport: EHAM (ICAO code)
- Arrival Airport: ESSA (ICAO code)
- Alternate Airport: ESSK (ICAO code)
- Departure Time: 2010Z (UTC, 24 hour)
- Enroute Flight Time: 1 hours, 15 minutes
- Fuel Available: 4 hours, 00 minutes
- Cruising Airspeed: 420 (Knots true airspeed)
- Cruising Altitude: FL200 (Feet ASL or Flight Level)
- Voice Capabilities: Voice Send and Receive, Voice Receive Only, Text Only
- Callsign: (empty)
- Aircraft Type: /Q
- Aircraft Capabilities: Heavy, Advanced RNAV with RNP and RVSM
- Route: SPY R12 JUIST UN873 ARS
- Comments: EuroHarmony VA flight

Buttons at the bottom: Load..., Save..., Send Flight Plan, Cancel, Help.

After I'm prepared for the flight (see Section 3.1), I start Flight Simulator and SB3, place the Fokker 70 at gate D47 at Amsterdam Schiphol terminal, file the flight plan, squawk standby, connect to the network then resend the flight plan.

I check Servinfo and my flight plan. I can see the following controllers I'll have to contact are online: Schiphol Ground (EHAM_GND), Schiphol Tower (EHAM_TWR), Schiphol Approach (EHAM_APP), Amsterdam Radar (EHAA_CTR), Bremen Radar (EDWW_CTR), Stockholm Center (ESOS_CTR), Arlanda Approach (ESSA_APP), Arlanda Ground (ESSA_GND). As you know, Center and Radar have the same meanings (CTR).

The missing facilities are Arlanda Tower (ESSA_TWR) and Kobenhavn Center (EKDK_CTR). If you take a look at the flight plan, you'll notice that a short part of my route takes me over Denmark so I'd need to contact Kobenhavn Center (EKDK_CTR), which is not online. Of course neither DEL nor DEP are online, but as I've said, these positions are very rarely used on the networks (usually only on big fly-ins).

In this flight, all controllers will use voice, and I will communicate via voice (see Section 4.3 for a sample flight with text communication). If the network is VATSIM, ATC call signs will have a V inserted, e.g. EDWW_V_CTR.

Ok, let's get into the action. I switch to Ground frequency and get the ATIS.

(voice server)/eham_gnd

Amsterdam Schiphol ground information F

Main landing rwy 01R, main departing rwy 01L

QNH 993, TL50, report position at initial contact

(I have to report my position, gate D47)

EHM140: EHM140 goedenavond, gate DELTA 47, FOXTROT copied, ready to copy IFR clearance to Arlanda

EHAM_GND: EHM140, goedenavond, stand by please

The GND controller has to coordinate with APP to obtain a route clearance, so I'll have to wait a while, as the traffic is quite heavy. In the meantime I make sure I have a pencil and paper, to note down the clearance.

EHAM_GND: EHM140, cleared to Arlanda as filed, Spijkerboor departure, squawk 0142 (this means I'll have to proceed to Spijkerboor VOR after departure, noted as SPY - also in the flight plan. The ATC didn't give me an initial altitude as I should know that the initial cleared altitude at Schiphol is always FL60. No Ground or Tower will confirm this, as it's mentioned in the charts.)

EHM140: Cleared as filed, Spijkerboor departure, squawk 0142 EHM140

EHAM_GND: EHM140, read back correct

EHM140: EHM140, ready for startup

EHAM_GND: EHM140, expect departure at 18, start up at on discretion. (I'm allowed to start the engines, but I should expect later due to traffic - time is always in minutes, e.g. now is 18:57 so 18 would mean 19:18)

EHM140: Startup at own discretion, EHM140

Later the controller contacts me:

EHAM_GND: EHM140, report ready for push-back (If I already have the engines started, I report ready)

EHM140: EHM140, ready for push-back

EHAM_GND: EHM140, push-back approved, call when ready for taxi

EHM140: Push-back approved, will call for taxi, EHM140

EHM140: EHM140, gate DELTA 47, ready to taxi

EHAM_GND: EHM140, taxi to holding point runway 01L via BRAVO

EHM140: Taxi to holding 01L via BRAVO, EHM140

EHAM_GND: EHM140, hold position, give way to the SAS 737 coming from your left

EHM140: Hold position, EHM140

EHAM_GND: EHM140, continue taxi

EHM140: Continue taxi, EHM140

EHM140: EHM140, holding 01L, ready for departure

EHAM_GND: EHM140, contact Tower on 119.220, good day

EHM140: 119.220, EHM140 good bye

I contact the Tower and receive information C, which is quite similar to GND's atis.

EHM140: EHM140, hello sir, CHARLIE copied, holding short 01L, ready for departure

EHAM_TWR: EHM140 good evening, stand by, traffic is a KLM 747 departing (a Boeing 747 is just taking off from 01L. The 747 is a 'heavy' aircraft so it will generate big wake turbulence that is dangerous for the following plane. So I'll have to wait for about 2 minutes for takeoff clearance)

EHAM_TWR: EHM140, winds from 355 at 12 kts, cleared for takeoff runway 01L

EHM140: Cleared for takeoff 01L, winds copied EHM140

I squawk C, apply full power and take off from runway 01L. There's a special rule at EHAM: planes departing must contact APP (or DEP, if it's online) when they pass 2000 ft; the TWR is not going to hand them over. So after I pass 2000 feet I switch to the APP frequency, 121.200 and receive the ATIS (I won't insert here every ATIS message, you are already familiar with ATIS).

EHM140: EHM140, good evening, with you, passing 2000 feet, Spijkerboor departure

EHAM_APP: EHM140, radar contact, proceed direct to SPY

EHM140: Direct to SPY, EHM140 (pronounced 'sierra-papa-yankee' and not 'spy'!)

When I pass 5000 feet I set the altimeter to 1013 (TL is 50, it was contained in the GND ATIS). When I'm about 5 nm inbound SPY, the controller will clear me for a higher altitude (note that I must not pass FL60 unless I'm cleared so and I mustn't exceed 250 kts below FL100) and instructs me to continue as filed.

EHAM_APP: EHM140, climb to flight level 120, after Spijkerboor continue as filed

EHM140: Climb to 120, after Spijkerboor as filed, EHM140

After a while, APP will hand me off to CTR who will approve further climb.

EHAM_APP: EHM140, contact Amsterdam Radar on 125.750, good day

EHM140: 125.750, EHM140 good day

EHM140: EHM140 good evening, with you, FL120

EHAA_CTR: EHM140 good evening, radar contact, climb to FL310 (flight level 310 is my cruise altitude, noted in the flight plan. As the flight is eastbound, I use an odd flight level)

EHM140: Climb to FL310, EHM140

I soon reach the cruise altitude and I won't have anything to do until I approach Stockholm except for monitoring the autopilot and listening to ATC instructions. The centers will hand me off if I reach the limit of their airspace, and they may instruct me to change altitude or heading (e.g. when there's a heavy thunderstorm ahead or for separation).

This time I don't encounter thunderstorms or conflicts and Amsterdam Radar will hand me off to Bremen Radar when I reach the limit of his airspace.

EHAA_CTR: EHM140, contact Bremen Radar on 125.650, good bye

EHM140: 125.650, EHM140 good bye and thanks for the ATC

The airspace of Germany is divided in five FIRs, Berlin, Bremen, Düsseldorf, Frankfurt and München. This time I'll have to contact Bremen as I'm within his airspace. At handoff you will be told which center to contact, in other cases (e.g. if you are coming from an uncontrolled airspace) check a map or Whazzup.

The ATIS of EDWW_CTR:

(voice server)/edww_ctr

Bremen Radar information D

For local wx check ACARS

(Weather is abbreviated as wx)

Report position and type on initial contact

(I have to report current position and aircraft type)

EHM140: EHM140 good evening, type Fokker 70, FL310, passing JUIST intersection, DELTA copied

EDWW_CTR: EHM140, radar contact, continue as filed

EHM140: Continue as filed, EHM140

No ATC in Denmark, so after I leave his airspace the controller will tell:

EDWW_CTR: EHM140, leaving my airspace, resume own navigation, frequency change approved

EHM140: Resuming own navigation, switching to unicom, EHM140 good night

I switch to 122.800 and continue my flight. Soon I will have to contact Stockholm Center. I switch to the center's frequency, receive the ATIS and contact the controller.

EHM140: EHM140, good evening, FL310, information KILO copied, for landing at Arlanda

ESOS_CTR: EHM140 radar contact, good evening, continue as filed

EHM140: Continue as filed, EHM140

Soon I have to descend for the approach

ESOS_CTR: EHM140, descend to FL180

EHM140: Descend to FL150, EHM140

ESOS_CTR: EHM140, negative, descend to FL180

EHM140: Descend to FL180, EHM140

ESOS_CTR: EHM140, continue to FL120, expedite descent (expedite means, in this case, to descend faster, so with a higher VSI, if safety permits)

EHM140: Continue descent to FL120, expediting, EHM140

ESOS_CTR: EHM140, contact Arlanda Approach on 120.500, good bye, have a nice landing

EHM140: 120.500, EHM140 good bye and thanks

I contact Approach and report ATIS received and flight level:

EHM140: EHM140, with you, descending to FL120, information INDIA received

ESSA_APP: EHM140, good eve, continue to ARS, descend to 5000, expect vectors for ILS runway 01 (of course I know the altimeter setting and transition level from the ATIS)

EHM140: Direct to ARS, descend to 5000, will expect vectors for 01, EHM140

I will have to slow down to 250 kts once I'm below FL100. When I'm a few miles inbound ARS, the ATC will instruct me to hold.

ESSA_APP: EHM140, hold at ARS at 5000 as published due to traffic

EHM140: Hold at ARS as published, EHM140

Later I will be instructed to continue the approach

ESSA_APP: EHM140, fly heading 090, descend to 3500

EHM140: Heading 090, descend to 3500, EHM140

ESSA_APP: EHM140, descend to 2500, turn left heading 040, you are cleared for ILS approach runway 01, report established

EHM140: Descend to 2500, left heading 040, cleared for ILS approach, will report EHM140

EHM140: EHM140 established on the glide slope, runway 01

As there's no TWR, he won't hand me off, but guide me until I've vacated the runway.

ESSA_APP: EHM140, winds calm, cleared to land runway 01, number two, traffic to follow is a 737 on final

EHM140: Cleared to land 01, traffic in sight EHM140 (an aircraft will land before me, so I'm number two)

ESSA_APP: EHM140, reduce speed to 160 kts

EHM140: 160 kts, EHM140

I pass the outer marker and have the gears extended, and the other plane has already vacated the runway (if there's traffic on the runway, the controller will instruct me to go around and guide me on an IFR pattern). After I land and vacate the runway, I squawk standby and report runway vacated.

EHM140: EHM140, runway vacated, holding position

ESSA_APP: EHM140, contact Ground on 121.950, good night

EHM140: 121.950, EHM140 good night

I switch to the frequency of ESSA_GND, receive the ATIS and contact the controller.

EHM140: EHM140, runway vacated, holding position

ESSA_GND: EHM140, taxi to gate S78 via YK Y SC (taxiways can also be identified by two letters, as in this case, or by a letter followed by a number)

EHM140: EHM140, sir I'm unfamiliar with the airport

ESSA_GND: EHM140, follow the SAS 737 in front of you to the terminal

EHM140: Roger, EHM140

EHM140: EHM140 at the terminal, ready for shutdown

ESSA_GND: EHM140 shutdown approved, flight plan closed, thank you for flying in Sweden

EHM140: EHM140 shutdown and flight plan closed, good bye and thanks for the ATC

I disconnect and close SB3 and Flight Simulator. Later I submit my flight report on the EuroHarmony site (remember to take notes while flying for EuroHarmony, like startup/shutdown and takeoff/landing times, takeoff/landing runways, speed and altitude etc).

4.3 Flight EHM-1651 LGKP-LGRP

The communications in this short flight in Greece from Karpathos to Rodos Diagoras will be in **text mode**. This sample flight describes typical text transmissions, as it's typed into the pilot client.

Although most pilots and controllers prefer voice (it's more realistic and far easier on both parties), sometimes you'll have to use text (e.g. when you or the controller has technical problems and cannot use voice), so you have to be familiar with it. It's not easy to type while flying the plane so abbreviations are permitted when using text (see Section 2.2.J).

You can also request text when you are inexperienced with voice and you don't understand what the controller is saying, or if you have internet connection problems and the transmission is breaking up. Just remember to indicate on your flight plan that you are using voice.

I choose the Dornier 228 (Class 1) and make my flight plan which will be:

LGKP – LINRO – RDS – LGRP

I fly eastbound so I choose an odd flight level, FL70 (if I was flying westbound, I'd choose e.g. FL60 or FL80). Cruising speed will be 210 kts.

I can see that only one controller is online, Athens Center (LGGG_CTR). As I'm within Athens FIR, he'll guide me on my flight from route clearance at LGKP to engine shutdown at LGRP. I start Flight Simulator and the pilot client, file my flight plan and connect to the network, and then I tune to the frequency of the center, receive the ATIS and contact him.

In this flight, I'll make only comments of the abbreviations; you already know the other procedures (how to tune to a frequency, when to squawk standby and C etc).

EHM651: **Good afternoon sir, requesting IFR clearance to LGRP, B copied** (I don't have to include my call sign in the text transmissions as the controller can see in the chat box who sent the message. Also I don't have to type the spelling of the letters, just type B instead of BRAVO)

LGGG_CTR: **EHM651, good afternoon, cleared as filed, 3500, sq 5200** (it's obvious that 3500 is the initial cleared altitude and sq is the squawk code)

EHM651: **clrd as filed, 3500, sq 5200**

LGGG_CTR: **EHM651, readback correct, call for s/u**

EHM651: **rdy for s/u** (=startup)

LGGG_CTR: **EHM651, s/u approved, call for taxi** (=report when ready to taxi)

EHM651: **s/u approved**

EHM651: **rdy to taxi**

LGGG_CTR: **EHM651, taxi to rwy 30 and h/s** (=taxi to runway 30 and hold short)

EHM651: **taxi to rwy 30 and h/s**

EHM651: **h/s rwy 30, rdy for dep** (=holding short runway 30, ready for departure)

LGGG_CTR: **EHM651, winds 340@12G17, cleared for t/o rwy 30, rep a/b** (=winds from 340 at 12 kts, gusting up to 17 kts, cleared for takeoff, report airborne)

EHM651: **clrd for t/o, winds copy, will rep a/b**

EHM651: **airborne**

LGGG_CTR: **EHM651, radar contact, dct LINRO** (=continue direct to LINRO intersection)

EHM651: **dct LINRO**

LGGG_CTR: **EHM651, c/m FL70, rep LINRO** (=climb and maintain FL70, report passing LINRO)

EHM651: **c/m FL70, will rep LINRO**

EHM651: **passing LINRO, FL70**

LGGG_CTR: **EHM651, dct RDS**

EHM651: **dct RDS**

LGGG_CTR: EHM651, d/m 2500, t/r hdg 070 (=descend and maintain 2500 ft, turn right heading 070)

EHM651: d/m 2500, right hdg 70

LGGG_CTR: EHM651, expect vect for ILS rwy 25, weather at LGRP 051550Z 28004KT 8000 FEW020 BKN200 16/15 Q1022 NOSIG (=tells me to expect vectors for ILS runway 25 and gives me the METAR weather report)

EHM651: expect ILS rwy 25, METAR copied

The ATIS of a center controller does not contain details about a specific airport as he/she controls several airports in the region where conditions may differ. However if he acts as APP for an uncontrolled airfield (e.g. in this flight, LGGG_CTR acts as APP for LGRP), he/she usually gives its details to the arriving traffic. If he/she doesn't, you may get the METAR from the ACARS.

I hope you know how to interpret a METAR report (it's not a tragedy if you don't, but it will add a lot to your piloting experience if you can decode a METAR report). The METAR above lets me know that weather at LGRP at 15:50 UTC was: winds from 280 at 4 knots, visibility 8000, sky conditions – few at 200 ft, broken at 2000 ft; temperature 16 C, dew point 15 C, altimeter 1022, no significant changes of weather conditions are expected within the next few hours.

LGGG_CTR: EHM651, d/m 2000, t/l hdg 340 (=descend and maintain 2000 ft, turn left heading 340)

EHM651: d/m 2000, t/l hdg 340

LGGG_CTR: EHM651, t/l hdg 280, clrd for ILS app rwy 25, rep est (=turn left heading 280, cleared for ILS approach runway 25, report established)

EHM651: hdg 280, clrd for ILS app rwy 25, will rep

EHM651: est ILS rwy 25

LGGG_CTR: EHM1601, winds 280@04, clrd to land rwy 25, rep vacated (=winds from 280 at 4 knots, cleared to land runway 25, report vacated)

EHM651: clrd to land, winds copied, will rep vacated

EHM651: rwy 25 vacated

LGGG_CTR: EHM651, taxi to main terminal

EHM651: taxi to main terminal

EHM651: at terminal, rdy for s/d

LGGG_CTR: EHM651, s/d approved, fp closed, good bye (=shutdown approved and flight plan closed)

EHM651: s/d approved and f/p closed, thanks and good day

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